



CONSOL ENERGY™

COPY

Consolidation Coal Company
P.O. Box 566
Sesser, IL 62884
(618) 625-2041

October 07, 2010

Daron Haddock
Utah Division of Oil, Gas and Mining
Coal Program
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Re: Emery Mine
Notice of Intent to Conduct Minor Exploration Emery 2.1, additional info task id 3607

Dear Mr. Haddock:

Please consider this additional information per you memo dated September 9, 2010 task ID 3607 related to Consol's Notice of Intent to Conduct Minor Coal Exploration. We are submitting three (3) sealed copies of the NOI application. The following addresses your departments recommendations.

- The disturbance area of each drill hole will be approximately 0.1 acre (refer to revised Fig. 1).
- The majority of the access to the site will be on a County road. A small portion of private road will be accessed by Consol and an agreement with the surface landowner will be in place prior to drilling.
- SHPO concurrence has been obtained on September 9, 2010.
- DOGM suggested wildlife text has been added at Appendix C page 1.

A cd rom has been included with the entire application in pdf format.

If you have any questions concerning this information, please call me at (618) 625-6850.

Sincerely,


John Gefferth
Environmental Engineer

CC: Karl Houskeeper – DOGM-Price Field Office-
Attachments

JAG/emery2.1mep.minorNOI.clntsk3607.docx

File in:

☐ Confidential

☐ Shelf

☒ Expandable

Date Folder

10072010 0150015

cc: Qucoming For additional information

RECEIVED

OCT 07 2010

DIV. OF OIL, GAS & MINING

APPLICATION FOR COAL PERMIT PROCESSING

COPY

Permit Change ☐ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Consolidation Coal Company

Mine: Emery Mine

Permit Number: _____

Title: Emery 2.1, Minor Exploration Permit

Description, Include reason for application and timing required to implement:

Emery 2.1 Exploration boreholes

Task 3607 DOGM recommendations

1010

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- ☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
 Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Jonathan M. Pachter
Print Name

Jonathan M. Pachter 10/7/10
Sign Name, Position, Date
General Manager, Environmental Services

Subscribed and sworn to before me this 7th day of October, 2010

Notary Public

My commission Expires:

Attest:

State of

County of

Janice L Davis

October 19, 2013

Pennsylvania

Washington

NOTARIAL SEAL

JANICE L DAVIS

Notary Public

CECIL TWP., WASHINGTON COUNTY

My Commission Expires Oct 19, 2013

For Office Use Only:

Assigned Tracking
Number:

Received by Oil, Gas & Mining

RECEIVED

OCT 07 2010

DIV. OF OIL, GAS & MINING

COOPY

Title:	Emery 2.1, Minor Exploration Permit, Exploration Boreholes	Task 3607 DOGM recommendations	10/10
---------------	--	--------------------------------	-------

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

[illegible]

Form DOGM - C2 (Revised March 12, 2002)

**NOTICE OF INTENT TO CONDUCT
MINOR COAL EXPLORATION
ON THE EMERY 2.1 MINE PROPERTY**

SUBMITTED TO

UTAH DIVISION OF OIL, GAS & MINING
Salt Lake City, Utah

SUBMITTED BY

CONSOLIDATION COAL COMPANY
P.O. Box 566
Sesser, IL

August 2010
Revised October 2010 task id 3607

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
R645-200. COAL EXPLORATION: INTRODUCTION	1
R645-200-100. Scope.....	1
R645-200-200. Responsibilities.....	1
R645-201. COAL EXPLORATION: REQUIREMENTS FOR EXPLORATION APPROVAL.....	2
R645-201-100. Responsibilities for Coal Exploration Plan Review	2
R645-201-200. Notices of Intention to Conduct Minor Coal Exploration	2
R645-201-300. Major Coal Exploration Permits.....	5
R645-201-400. Requirements for Commercial Sale.....	6
R645-202. COAL EXPLORATION: COMPLIANCE DUTIES	6
R645-202-100. Required Documents	6
R645-202-200. Performance Standards	6
R645-203. COAL EXPLORATION: PUBLIC AVAILABILITY OF INFORMATION.....	9
R645-203-100. Public Records	9
R645-203-200. Confidentiality	9

LIST OF APPENDICES

Appendix A – Vegetation Survey
Appendix B – Cultural Resource Inventory (in Confidential File)
Appendix C – Wildlife Information

LIST OF DRAWINGS

Figure 1 – Typical Drill Site Layout
Plate 1 – Proposed Emery 2.1 Drill Holes

**NOTICE OF INTENT TO CONDUCT
MINOR COAL EXPLORATION
ON THE EMERY 2.1 PROPERTY**

R645-200. COAL EXPLORATION: INTRODUCTION

Consolidation Coal Company ("Consol") proposes to drill five coal exploration holes within the Proposed Emery 2.1 face-up area during 2010. The holes have been designated as EM2.1-10-01 through EM2.1-10-08 and will be located in Section 33 of T. 22 S., R. 6 E., SLBM (see Plate 1).

This Notice of Intent is submitted pursuant to State of Utah rules for minor coal exploration as administered by the Utah Division of Oil, Gas and Mining ("the Division"). For ease of reference, this plan follows the format of the applicable rules (R645-200 through R645-203).

R645-200-100. Scope

Consol intends to drill up to eight, 5- to 6-inch diameter rotary/core holes that will intercept one or more coal seams each. The exploration will occur on surface and coal owned by Consol. Less than 250 tons of coal will be removed under this plan. Consol is filing this Notice of Intention to Conduct Minor Coal Exploration pursuant to the requirements of R645-201-200.

R-645-200-200. Responsibilities

210. Responsibility to Comply with Regulations. Consol will comply with the requirements of R645-200 through R645-203.

220. Responsibility of the Division to Review and Reply. The Division will receive and review this Notice of Intention to Conduct Minor Coal Exploration. The Division will review and reply within 15 days.

230. Responsibility of the Division to Coordinate with Other Agencies. The Division will coordinate review of this Notice of Intent with the other appropriate government agencies (if any). Consol will provide enough copies of this notice to the Division for distribution to these agencies.

R645-201. COAL EXPLORATION: REQUIREMENTS FOR EXPLORATION APPROVAL

R645-201-100. Responsibilities for Coal Exploration Plan Review

The surface lands on which this exploration will be conducted are privately owned and not subject to 43 CFR Parts 3480-3487. Therefore, exploration plan review will be the responsibility of the Division. As a result, this Notice of Intent is being submitted to the Division as the lead agency for review and approval.

R645-201-200. Notices of Intention to Conduct Minor Coal Exploration

210. Division Review Requirement. This Notice of Intent requires Division review prior to conducting exploration. Consol is submitting this Notice to the Division in August 2010, with the goal of beginning exploration activities in October 2010.

220. Required Applicant Information. The following information is provided in support of this Notice of Intent:

Applicant:

Consolidation Coal Company
Emery Mine Property
P.O. Box 566
Sesser, Illinois, 62884
618-625-2041

Responsible Representative:

Consolidation Coal Company
John Gefferth
P.O. Box 566
Sesser, Illinois, 62884
618-625-2041

Proposed Exploration Area:

The proposed drill holes are located as indicated on Plate 1 in Emery County, Utah. The drilling will occur on lands owned by Consol. Coordinate locations and anticipated drilling depths are noted in Table 1. Holes EM2.1-10-01 and EM2.1-10-02 are located in an area permitted under DOGM permit 015/015. The area has been previously disturbed and is under SCMRA bond. Holes EM2.1-10-03 through EM2.1-10-08 are located in an area in which baseline data have been collected for the proposed Emery 2 new permit area addition. This baseline information was used in the preparation of this submittal.

TABLE 1

Summary of Estimated Drill Hole Locations and Depths^(a)

Drill Hole Number	Northing	Easting	Approx. Surface Elev. (ft)	Estimated Depth (ft)
EM-10- 01	6753150	1708725	5910	57
EM-10- 02	6753105	1708835	5909	57
EM-10- 03	6752700	1708700	6020	148
EM-10- 04	6752785	1708560	6012	150
EM-10- 05	6752865	1708450	6009	157
EM-10- 06	6752620	1708835	6038	57
EM-10- 07	6751725	1708125	6049	68
EM-10- 08	6750390	1707990	6053	71

^(a)Northing and Easting coordinates are State Plane (ft), NAD 83. Total estimated depths include 5 feet of drilling beneath target seam floor.

Period of Intended Exploration:

Planned startup date: October 1, 2010

Planned completion date: December 15, 2010

It is anticipated that all drilling and reclamation activities associated with this project will be completed within 75 days following the date of implementation. However, the actual startup date may vary, thereby delaying the completion date. All holes will be sealed and the associated disturbed areas reclaimed within two weeks of completion.

Method of Exploration:

Drilling Methods: The method of exploration to be used is rotary/core drilling. Support equipment will include a water truck, flatbed truck to haul pipe and materials, pickup trucks to transport personnel, and equipment to reclaim the drill sites once drilling is complete.

Drilling will be accomplished using a contractor experienced in rotary and core drilling. The drilling will be accomplished without the aid of drilling fluids if possible. If drilling fluids are required, a portable mud pit will be used. No excavated mud pits are planned. Based on a review of available hydrologic data, it is not anticipated that sufficient subsurface water will be encountered to require the discharge of groundwater to local surface waters. If this becomes necessary, all such water will be discharged in accordance with the requirements of the Utah Division of Water Quality.

Amount of Coal to be Removed: A 5- to 6-inch diameter hole will be rotary and core drilled for the entire depth of each hole, penetrating through the "I" Seam. The core and cuttings will be examined and/or analyzed to determine the characteristics of the roof, coal, and floor. It is anticipated that a maximum of about 100 pounds of coal will be removed from each hole, resulting in much less than 1 ton of coal being removed for study and analysis under this plan from all of the holes combined.

Site Access: Existing public and private roads and trails will be used to access the sites to the extent possible. Some construction may be needed to build short sections of road to each well location or to improve existing access routes. These short road sections will all be on property owned by Consol. It is anticipated that access route grading will be accomplished with a small dozer or backhoe. Since the areas where the exploration holes are to be drilled are relatively flat (see photos in Appendix A), it is not anticipated that extensive pad construction will be required. Brattice cloth or similar material will be placed under and adjacent to the rig to protect the topsoil and surface vegetation

After drilling has been completed, each site will be graded to approximate original contour, if necessary, and reclaimed. All materials, tools and equipment will be removed immediately upon completion of drilling and reclamation activities.

Drill-hole Completion: All drill holes will be plugged with cement from bottom to top after all data are collected from the holes. Following completion of drilling and cementing activities, the drill rig and all associated equipment and materials will be removed from the area by vehicle. All trash and extraneous materials will be removed from the property and disposed of at an approved, off-site location.

Practices to Protect from Adverse Impacts and to Reclaim the Area: Access to all boreholes will be by existing tracked routes to the maximum extent practical. Some grading of local areas may be necessary to permit efficient access to the drilling sites. Grading of drill sites will be kept to a minimum, and then only as necessary to allow efficient operation of the equipment. If major grading is necessary in an area that is currently undisturbed, the top 6 inches of soil will be removed prior to disturbance. This soil will be stockpiled, protected from erosion, and redistributed on the disturbed area during reclamation of the site.

Drilling will be accomplished using only air, if possible. This will eliminate the need for a mud pit and the potential for spills of drilling fluids. If drilling fluids are needed, water and drilling fluids will be contained in a portable mud pit and recirculated to the extent possible. Any contents of the portable mud pit will be

removed from the site at the completion of drilling. Cuttings will be removed from the site to a State-approved landfill prior to reclamation.

All areas disturbed under this drilling program that were not previously disturbed (e.g., roads and the locations of EM-10-01 and EM-10-02, which will be drilled within an existing sedimentation pond)) will be regraded after drilling to the approximate original contour during reclamation. All existing dirt roads will be left in place at a serviceability at least equal to that which existed prior to drilling. During reclamation, soils compacted by vehicle and equipment traffic will be loosened to promote revegetation. Final grading will be along the contour to control erosion. After soils have been loosened the impacted area will be reseeded with the following seed mix:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Pounds Pure Live Seed/Acre</u>
Indian ricegrass	<i>Oryzopsis hymenoides</i>	3.0
Alkali sacaton	<i>Sporobolus airoides</i>	0.5
Galleta hiliaria	<i>Hilaria jamesii</i>	2.5
Western wheatgrass	<i>Agropyron smithii</i>	3.0
Winterfat	<i>Eurotia lanata</i>	4.0
Fourwing saltbush	<i>Atriplex canescens</i>	4.0
Desert globemallow	<i>Sphaeralcea ambigua</i>	0.5
Blueleaf aster	<i>Aster laevis</i>	0.5
Sand dropseed	<i>Sporobolus cryptandrus</i>	0.25
Castle valley clover	<i>Atriplex gardneri</i> (var. <i>cuneata</i>)	4.0
Black sagebrush	<i>Artemesia nova</i>	0.25
Mat saltbush	<i>Atriplex corrugate</i>	<u>4.0</u>
TOTAL		26.5

Seed will be placed by broadcasting. Following placement of seed, the soil will be lightly raked to cover the seed.

R645-201-300. Major Coal Exploration Permits

The regulations contained in R645-201-300 do not apply to this Notice of Intent.

R645-201-400. Requirements for Commercial Sale

The regulations contained in R645-201-400 do not apply to this Notice of Intent.

R645-202. COAL EXPLORATION: COMPLIANCE DUTIES

R645-202-100. Required Documents

While in the exploration area, Consol will have available a copy of this Notice of Intent for review by an authorized representative of the Division upon request.

R645-202-200. Performance Standards

210. Substantial Disturbance. Neither substantial disturbance of natural land nor the removal of more than 250 tons of coal is anticipated under this Notice of Intent.

220. Violation of State Program. Consol will comply with all coal exploration requirements of the State Program, and any conditions on approval of the exploration plan. Consol welcomes inspection of its exploration operations at any time during this project.

230. Operational Standards.

Habitats of Unique or Unusually High Value:

A vegetation survey of the drill sites and access routes has been performed by Mt. Nebo Scientific (see Appendix A). As indicated, vegetation in the area consists primarily of sagebrush, shadscale, and greasewood communities, depending on the hole location. Two of the drill sites (EM-10-01 and EM-10-02) are located in an area of prior disturbance.

As indicated in Appendix A, the potential exists that the endangered Wright's fishhook cactus (*Sclerocactus wrightiae*) is located near drill sites EM-10-03, EM-10-04, and EM-10-05. During field surveys conducted in May and August 2010, it was not possible to positively distinguish the observed cacti as either Wright's or the more common Whipple's fishhook cactus (*Sclerocactus whipplei*). As a result, all fishhook cacti in the general vicinity have been marked in the field and will be avoided during exploration activities.

The primary land use associated with the area is wildlife habitat. According to Plate 10-1 of the Emery Mine permit and information obtained from the Utah Division of Wildlife Resources (<http://atlas.utah.gov/wildlife/viewer.htm>), the area of planned exploration activities potentially provides winter range habitat for

elk. However, the winter range habitat stops essentially at the western edge of the project area and is, therefore, generally considered to be poor in the area of the drilling project. No Threatened, Endangered, or Sensitive wildlife species are known to exist at the drill hole locations or along their access routes, according to the Utah Division of Wildlife Resources GIS data base. Additional information regarding wildlife in the project area is provided in Appendix C.

The proposed drilling is not expected to have a detrimental impact on any plant or wildlife species, their habitat, or other land uses associated with the area. In the event that drilling activities extend beyond November 20 (the approximate start of the elk winter range exclusionary period), Consol will schedule a site visit with a wildlife biologist from the Utah Division of Oil, Gas and Mining or the Utah Division of Wildlife Resources to discuss continued operations.

Roads:

Existing public and private roads and trails will be used to access the sites to the extent possible. Some construction may be needed to build short sections of road to each well location or to improve existing access routes. Any routes that may need upgrading for equipment access are within lands owned or controlled by Consol.

Topsoil Removal and Storage:

It is anticipated that topsoil will not be disturbed under this exploration plan except where minor grading is necessary for site access or for leveling the rig and associated components. Brattice ground cover will be used under and adjacent to the rig to protect the topsoil and surface vegetation (see Figure 1).

Diversions:

No diversions of overland flows and ephemeral, perennial, or intermittent streams are anticipated under this plan. If diversions become necessary, these will be made in accordance with R645-301-742.3.

It is anticipated that drilling will be primarily completed utilizing air as the method to retrieve cuttings from the borehole. However, if necessary, water may be added to facilitate lubrication of the drilling bit.

Minimizing Disturbance to the Hydrologic Balance:

Coal exploration will be conducted in a manner that minimizes disturbance to the prevailing hydrologic balance. During exploration, surface disturbance will consist only of that which is necessary to provide site access as well as to level the rig and associated structures. Since surface disturbance will be minimized, no

additional runoff during precipitation events is anticipated. No impoundments to contain runoff will be necessary.

Acid- or Toxic-Forming Materials:

No acid- or toxic-forming materials or coal waste will be produced, used, or handled during this exploration program.

Archeological Information:

A cultural resource inventory for the Emery 2 project area (MOAC 09-152) was performed by Montgomery Archeological Consultants (see Appendix B). Drill holes EM2.1-10-3 through EM2.1-10-08 are within this study area and do not contain any eligible sites. Holes EM2.1-10-01 and EM2.1-10-02 are within the permitted area (015/015) and the surface has been previously disturbed and covered in the original Emery mine archeology study.

240. Reclamation Standards

Excavations:

Small shovel and similar cuts may be made for leveling the rig and associated equipment: These will be filled in to approximate original contour as soon as the drilling equipment is removed from each site.

Revegetation:

Areas disturbed under this exploration plan will be revegetated as described above. All drilling areas (except EM-10-01 and EM-10-02, which will be drilled within an existing sedimentation pond) will be re-seeded as soon as practical upon completion of each hole, removal of equipment, and recontouring of the site. The seed mix consists of native species that are capable of re-establishing in the area, thereby providing cover that will stabilize the soil surface from erosion. No crops are raised in the project area, making crop replacement unnecessary.

Reclamation of Boreholes:

No mine openings or exploration openings will be created. Although it is not currently anticipated that any of these holes will be converted to water monitoring wells, Consol will comply with rules R645-301-738 and R645-301-765 if that decision is made in the future.

Upon completion of down-hole procedures, each drill hole will be sealed with cement from the bottom of the hole to ground level. A brass monument marker will be placed in the top of each cement surface plug with the hole number. All holes will be sealed and the associated disturbed areas reclaimed within two weeks of completion.

Removal of Equipment:

When no longer needed for the project, all equipment mobilized for this exploration effort will be removed from the area to facilitate reclamation work. Consol does not anticipate needing this equipment for other purposes in the exploration area.

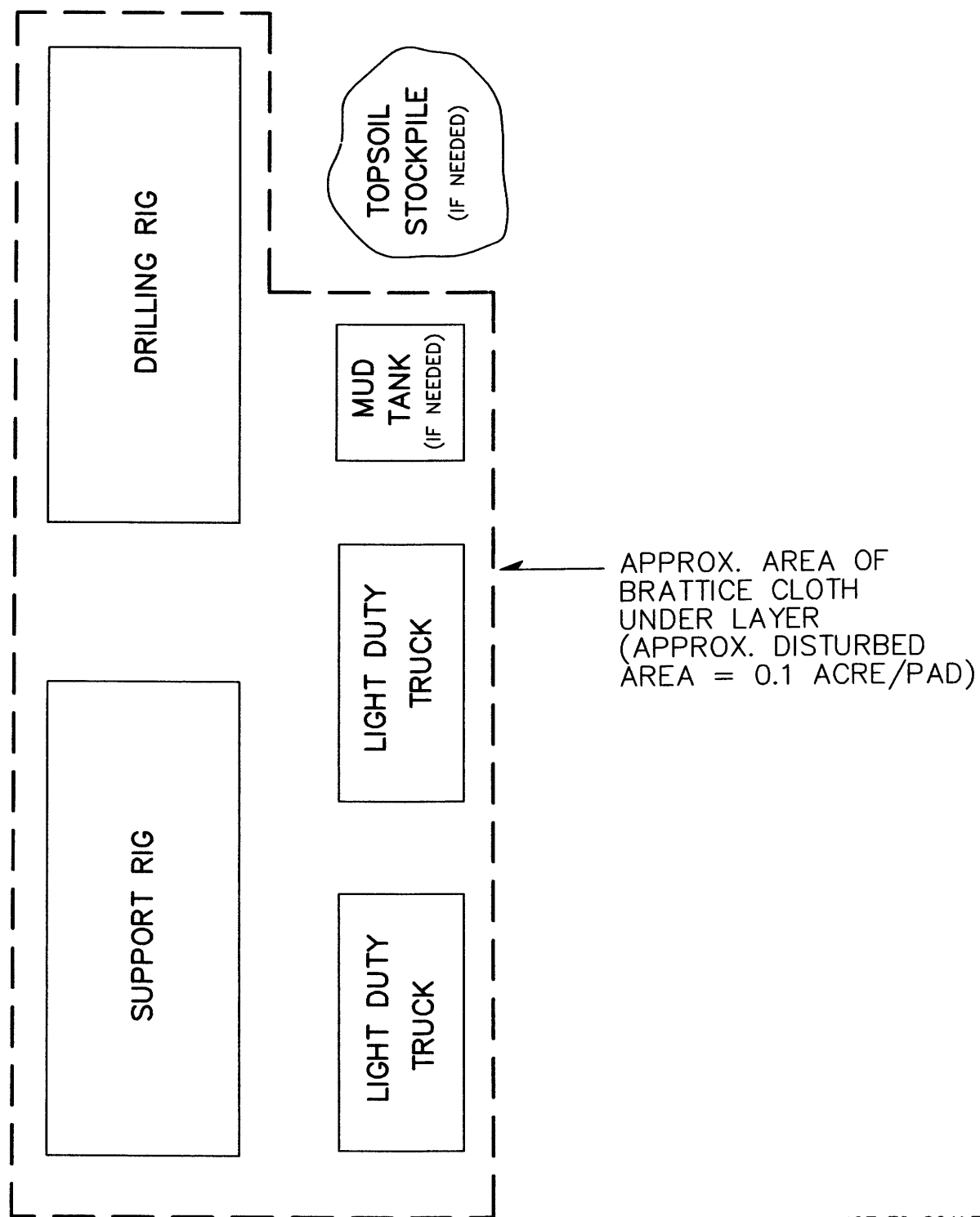
R645-203. COAL EXPLORATION: PUBLIC AVAILABILITY OF INFORMATION

R645-203-100. Public Records

It will be the responsibility of the Division to maintain non-confidential records and make them available for public inspection and copying.

R645-203-200. Confidentiality

The cultural resource information referenced in Appendix B is confidential and should not be made available to the public.



NOT TO SCALE

- NOTES:
1. Site Layout may change to accomodate efficient operation.
 2. Brattice cloth to be placed beneath all areas where equipment or materials will be stored at the drill site, except beneath the topsoil stockpile (if needed).
 3. Disturbed areas to be reclaimed as indicated in the text.

FIGURE 1. TYPICAL DRILL SITE LAYOUT



Consolidation Coal Company
Emery 2.1 Property

Minor Exploration Permit NOI
October 2010

APPENDIX A

Vegetation Survey

**Vegetation of the
Emery 2.1 Area
Exploration Drill Sites:
EM-10-01 *through* EM-10-08**

for
CONSOL*ENERGY*



Prepared by

MT. NEBO SCIENTIFIC, INC.

330 East 400 South, Suite 6
Springville, Utah 84663
(801) 489-6937

by

Patrick D. Collins, Ph.D.

for

CONSOL ENERGY

P.O. Box 566
Sesser, Illinois 62844



August 2010

TABLE OF CONTENTS

INTRODUCTION.....	1
METHODS.	1
RESULTS.	1
Plant Communities of the Drill Sites.	1
Drill Site EM-10-01.....	2
Drill Site EM-10-02.....	2
Drill Site EM-10-03.....	3
Drill Site EM-10-04.....	4
Drill Site EM-10-05.....	5
Drill Site EM-10-06.....	5
Drill Site EM-10-07.....	6
Drill Site EM-10-08.....	6
Threatened & Endangered Plant Species.	7
Federal Listed Plants in Emery County.....	7
Survey Results.....	8
Species Protection & Preservation.	11

INTRODUCTION

Consolidation Coal Co. (Consol) has applied for an exploration drilling permit in the Emery 2.1 Area (a portion of the Emery 2 Area) of the Emery Mine. This mine site is located in Emery County, Utah approximately 60 miles south of the town of Price. More specifically, the study area was located in Sections 32 and 33, Township 22 South, Range 6 East, SLB&M. A presence or occupancy survey for threatened, endangered or otherwise sensitive wildlife species (TES) and their habitats was conducted during the sensitive plant species survey for the Emery 2 Area (a 187 acre parcel). The survey results confirmed the published information from DWR noting that there were no TES wildlife species in the area. Consequently, the information herein has been prepared to address the plant communities that will be impacted by the drilling activities as well as potential TES plant species that could be present at the sites.

METHODS

Field studies to record data for community and habitat descriptions for this report as well as surveys for potential threatened, endangered or otherwise sensitive plant species were conducted in early May and early August, 2010. Threatened and endangered species lists for the area were compiled prior to the field studies from previous consultations with the U.S. Fish & Wildlife Service (USFWS), Salt Lake City, Utah and sensitive species files located at *Mt. Nebo Scientific, Inc.*, Springville, Utah.

RESULTS

Plant Communities of the Drill Sites

Below is a brief description of the plant communities that would be impacted by the drilling activities proposed by Consol in the Emery 2.1 Area.

Drill Site EM-10-01

This drill site was located in an area where the plant community had been disturbed previously by the current mine surface operations. The site was relatively flat and was part of the floodplain deposited by Quitchupah Creek



Figure 1: Drill Site: EM-10-01

(Figure 1). It was located in Sediment Pond 8.

In its native, undisturbed condition, Drill Site EM-10-01 was probably comprised of a greasewood (*Sarcobatus vermiculatus*) community; the community was later encroached upon by the invasive exotic plant called salt cedar (*Tamarix chinensis*). Current common species of the proposed drill site included greasewood, salt cedar, Russian thistle (*Salsola tragus*), halogeton (*Halogeton glomeratus*) and summer-cypress (*Bassia scoparia*).

Drill Site EM-10-02

This drill site was adjacent to EM-10-01 (Figure 2). Consequently, it was also part of the same floodplain mentioned above, has a



Figure 2: Drill Site: EM-10-02

similar history of disturbance, and is also located in Sediment Pond 8. As a result, the same common species occupy the site including greasewood, salt cedar, Russian thistle, halogeton and summer-cypress.

Drill Site EM-10-03

Although a component of the more general Shadscale Plant Communities in the area, this drill site could more specifically be described as supporting a Bigelow's Sagebrush/Galleta Community (Figure 3). The slight change of the community's composition from the more typical Shadscale Communities in the area is probably due to its exposure, edaphic characteristics and general land surface physiognomy.

The site is located within the Mancos Shale geologic formation, with an



Figure 3: Drill Site: EM-10-03

elevation of 5,928 ft above sea level. Common shrub species in the area included Bigelow's sagebrush (*Artemisia bigelovii*), shadscale (*Atriplex confertifolia*), low rabbitbrush (*Chrysothamnus viscidiflorus*), greasewood, corymb buckwheat (*Eriogonum corymbosum*), broom

snakeweed (*Gutierrezia sarothrae*) and winterfat (*Ceratoides lanata*). Common forbs included cryptanthus (*Cryptantha* spp.) and brittle phacelia (*Phacelia demissa*). The grass species of the site were comprised of galleta (*Hilaria*

jamesii), sand dropseed (*Sporobolus airoides*), blue grama (*Bouteloua gracilis*) and Indian ricegrass (*Stipa hymenoides*).

Drill Site EM-10-04

Very close in proximity to Drill Site EM-10-03 described above, the area was part of the more general Shadscale Plant Communities of the area (Figure 4). More specifically, it would be called a Shadscale/Indian Ricegrass Community.

With the same geology and similar elevation as above, the common shrub species in the area included shadscale, Bigelow's sagebrush, greasewood and broom snakeweed. Common forbs included cryptanthus species, desert trumpet (*Eriogonum inflatum*) and brittle phacelia. The grass species of the site were comprised of galleta, sand dropseed and Indian ricegrass.



Figure 4: Drill Site: EM-10-04

Drill Site EM-10-05

Also very close in proximity to Drill Sites EM-10-03 and EM-10-04, this area was again part of the Shadscale Plant Communities in the area (Figure 5). To be more specific about the community name here, it would be appropriately called a



Figure 5: Drill Site: EM-10-05

Shadscale/Galleta Community. Important plant species at EM-10-05 included the woody species Bigelow's sagebrush, greasewood, shadscale, low rabbitbrush, prickly-pear cactus (*Opuntia fragilis*) and Mormon tea (*Ephedra viridis*). Common forbs included cryptanthus, desert trumpet and brittle phacelia. The grass species of the site were comprised of galleta, sand dropseed and slender wheatgrass (*Elymus trachycaulus*).

Drill Site EM-10-06

Also located in fairly close proximity to the above last three drill sites, EM-10-06 supported a Shadscale/Galleta Community (Figure 6). The most common shrub species



Figure 6: Drill Site: EM-10-06

here included shadscale, broom snakeweed, greasewood, prickly-pear cactus and corymb buckwheat. Important forbs were brittle phacelia and desert trumpet; important grasses were galleta and Indian ricegrass.

Drill Site EM-10-07

Located approximately 1,000 ft south of the last few drill sites, EM-10-07 was also within a Shadscale

Community area, but more specifically could be called a Black Sagebrush/Galleta Community (Figure 7).

Important species here included shrubs such as black sagebrush (*Artemisia nova*), shadscale, prickly-pear cactus, broom



Figure 7: Drill Site: EM-10-07

snakeweed and greasewood. Unlike the previous drill sites, there were also scattered pinyon-pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) trees in the area. Important forbs here were brittle phacelia and desert trumpet; grasses were again galleta and Indian ricegrass.

Drill Site EM-10-08

This drill site was located about 350 ft south of the last site. This drill site would be more accurately called a Shadscale/Galleta Community. Most common woody species here were shadscale, black sagebrush, broom snakeweed and

greasewood. Forbs species at EM-10-08 included brittle phacelia, desert



Figure 8: Drill Site: EM-10-08

trumpet, cryptanthus and pretty buckwheat (*Eriogonum bicolor*). The grass species of the site included galleta, blue grama and Indian ricegrass (Figure 8).

Threatened & Endangered Plant Species

Federally Listed Plants in Emery County

There are several federally listed plant species that are known to occur in Emery County, Utah (Table 1). The drill sites in the Emery 2.1 Area were surveyed for the presence of any of these plant species.

Table 1: Potential Threatened or Endangered Plant Species of Emery County, Utah

Scientific Name	Common Name	Status
<i>Pediocactus winkleri</i>	Winkler's Footcactus	T
<i>Pediocactus despainii</i>	San Rafael Cactus	E
<i>Schoenocrambe barnebyi</i>	Barneby Reed Mustard	E
<i>Sclerocactus wrightiae</i>	Wright Fishhook Cactus	E
<i>Townsendia aprica</i>	Last Chance Townsendia	T
<i>Erigeron maguirei</i>	Maguire Daisy	T
<i>Cycladenia humilis</i> var. <i>jonesii</i>	Jones Cycladenia	T

E = Endangered
T = Threatened

Survey Results

A species of fishhook cactus (*Sclerocactus* sp.) was found on Drill Sites EM-10-03, EM-10-04 and EM-10-05. The habitat where this cactus was found is a relatively small portion of the Emery 2.1 Area.

The Emery Mine is situated close to where two species of fishhook cacti (*Sclerocactus* spp.) meet. One species (*S. whipplei*) has been observed in another portion of the Emery Mine permit area. This plant was the more common Whipple's fishhook. Its geographic range extends from the northeast to the southeast cold desert regions of Utah, and also includes portions of Colorado, Arizona, New Mexico and Nevada. Another cactus, Wright's fishhook (*S. wrightiae*), is a federally listed endangered plant species. This cactus is endemic to Utah's Emery and Wayne Counties. The Emery Mine site includes habitats that are very close to those utilized by both species.

Whipple's fishhook is most often found at elevations that range from 3,700 ft to 8,000 ft above sea level. *S. whipplei* var. *rosea* (Figure 9), the variety found in this area, grows in various geologic strata, including the formations found in the Emery 2.1 Area, or Mancos Shale at the contact point between the Ferron Sandstone and Bluegate Shale Members

of this formation. This species also grows in a variety of plant communities including mixed desert shrub, pinyon-pine, sagebrush, and ponderosa pine.



Figure 9: *Sclerocactus whipplei* var. *rosea*

The rare Wright's fishhook (Figure 10), on the other hand, is mostly found at lower elevations, or between 4,800 ft to 6,100 ft above sea level. Plant communities where this species grows is more restricted, and includes salt desert shrub and shrub-grass communities to pinyon-juniper. The geology is also more restricted for this species. Wright's fishhook grows in the Mancos Shale formation, but is more often found in the Tununk Shale and Ferron Sandstone Members and in the contact area between them. The species also, however, can be found in the Bluegate Shale Member of the Mancos Shale Formation.



Figure 10: *Sclerocactus wrightiae*

Small populations of a species of fishhook cactus (*Sclerocactus* sp.) were found in some drill sites in the Emery 2.1 Area (Figure 11). These plants were located at the contact area between the Bluegate Shale and Ferron Sandstone Members of the Mancos Shale formation. If the plants were indeed Wright's fishhook, the endangered one, the elevation of these populations would be near the upper range of its elevational gradient (5,928 ft). All things considered, including habitat, geology, soils, elevation, exposures and diagnostic characteristics, the populations in this area appear intermediate between *S. whipplei* and *S. wrightiae*, possibly leaning closer to the former.



Figure 11: *Sclerocactus* sp.

Interestingly, Welsh, et al. in *A Utah Flora* (2008) evidently also found the difficulties in naming their collections in an area very close to the study area. They stated the following in the Utah Flora's description for *S. wrightiae*:

“The small flowers and short spines are evidently diagnostic. Occasional intermediates with S. whipplei var. roseus occur in Emery Co. near the Sevier Co. line – at edaphic ecotones marking the boundary between shale and sandstone member of the Mancos Shale Formation. This entity is almost an identical match both morphologically and ecologically to S. mesaverdae (Boissevain) L. Benson, and that name being older will have priority should the two be combined”.

The results of the drill site surveys suggested the cacti observed had morphological characteristics very close to both species of *S. whipplei* and *S. wrightiae*. Many of the plants observed appeared to be juveniles and too young to flower (it can take four years or more to mature enough to produce flowers). Yet, for other unknown reasons, the more mature plants in these small populations displayed few flowers this year. When known populations of *S. whipplei* (on-site) and *S. wrightiae* (off-site) were visited during the same time periods in May and August, 2010, both species displayed many flowers. Because all other diagnostic characteristics were so similar, positive identifications of the fishhook cacti in Emery 2.1 Area populations were not possible this year.

As a second opinion, another botanist was taken to the site. Dr. Ronald J. Kass observed the *S. whipplei* populations in the Emery Mine and adjacent areas and well as the *Sclerocactus* sp. that were found at the drill sites in the Emery 2.1 Area. Dr. Kass has probably conducted as many or more surveys for *S. wrightiae* as anyone in the country. His opinion and the findings in this report were consistent.

Species Protection & Preservation

Thirty (30) individual *Sclerocactus* sp. plants were found during the survey of the drill site areas. Because identification of the *Sclerocactus* populations remain uncertain, Consol agreed to avoid the plants during this phase of their drilling program in the Emery 2.1 Area by relocating the drill sites. To accomplish this, all individual fishhook plants were located and numbered in the field with pin-flags and their coordinates marked with GPS instruments. Additionally, photographs were taken of each plant. Depending on the condition of the pin-flags when it is time for the drill rigs to access the site, the locations could be re-marked in the field.

Consolidation Coal Company
Emery 2.1 Property

Minor Exploration Permit NOI
October 2010

APPENDIX B

Cultural Resource Inventory

CONFIDENTIAL

Copies of this document have been placed
in the Confidential File

Consolidation Coal Company
Emery 2.1 Property

Minor Exploration Permit NOI
October 2010

APPENDIX C

Wildlife Information

APPENDIX C

Wildlife Information

Information concerning threatened and endangered wildlife species was obtained from the Utah Division of Wildlife Resources web site (<http://dwrcdc.nr.utah.gov/ucdc/>). Data obtained from this site indicate that the following Federally-listed threatened (T), endangered (E), or candidate (C) wildlife species may occur in Emery County, Utah:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Humpback Chub	<i>Gila cypha</i>	E
Bonytail	<i>Gila elegans</i>	E
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	E
Razorback Sucker	<i>Xyrauchen texanus</i>	E
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	C
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	T
Black-footed Ferret (unconfirmed)	<i>Mustela nigripes</i>	E (extirpated)
Canada Lynx	<i>Lynx Canadensis</i>	T

While these species may occur within Emery County, information obtained from the Utah Division of Wildlife Resources GIS data base (<http://atlas.utah.gov/wildlife/viewer.htm>) indicates that none of these threatened, endangered, or candidate species are known to occur within the area of the Emery 2.1 exploration drilling project.

Additional information obtained from the above web site indicates that the Hidden Valley drilling project will occur on the edge of habitat defined by the Utah Division of Wildlife Resources as elk winter range. Any such habitat that extends into the area of the drilling project is expected to be of poor quality given the location of the majority of the project area outside of the mapped range.